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Analysing the latent linguistic structure of American-English and German dream narratives

Abstract

This cross-cultural study assessed differences in the latent linguistic structure and the dimensions of its individual functions in American-English and German written dream memories. This was done through the use of frequency counts of linguistic variables and a multi-feature/multivariate approach, in order to explore “empirically and quantitatively linguistic features that co-occur in texts because they work together to mark some common underlying function within the text” (Biber, 1988, p.55).

The Linguistic Inquiry and Word Count (LIWC 2001) text analysis program (Pennebaker, Francis, & Booth, 2001) calculated the percentage of words and semantic content of all American-English (N = 100) and German (N = 100) written dream memories. The results indicated that German dream memories reflected a significantly higher frequency of group-references, articles, positive affect, negative affect, causation words, insight words, certainty words, time references, present tense, spatial words and current concerns references, whereas American-English dream memories used significantly more prepositions, numbers, tentative words, sensory-perceptual processes, past tense, exclusion words and motion words.

An exploratory principal component analysis with an oblimin factor rotation was performed in order to assess the conceptual linguistic function of the factorial dimensions in American-English and German written dream memories. The results identified in total 3 linguistic dimensions that showed partial cross-cultural similarities, for which the factorial dimensions of German dreams included – 1) present tense vs. past tense, 2) exclusion vs. inclusion, 3) spatial references vs. other references. The factorial dimensions of American-English dreams included – 1) first-person singular pronouns vs. first person plural pronouns, 2) spatial references vs. insight, 3) exclusion vs. positive emotion words.

An additional hierarchical cluster follow-up analysis proposed three homogeneous linguistic dimensions within the content of American-English and German dream

narratives, including 1) self- and other-references, 2) level of description, 3) space and motion. A cross-cultural difference was identified in the first and second cluster. In German dreams, 'self- and other-references' were associated with present tense processes, whereas 'level of description' related to past tense processes. Conversely, 'self- and other-references' were associated with past tense process and 'level of description' related to present tense processes in American-English dreams.

Consequently, the results demonstrated that the frequency of linguistic content and the linguistic structure differed cross-culturally in American-English and German dream narratives, which might indicate that the discursive presentation of dream narratives may be socioculturally moderated (Connor, 1996).

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Analyzing the latent linguistic structure of American-English and German dream narratives

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Introduction

- Content analysis of German & American-English dreams (Schredl et al., 2003)
 - Hall & Van de Castle (1966) rating system
 - Dream content comparable, i.e., dream characteristics and gender differences
- Dreams follow a hierarchical structure (Cariola, 2008):
 - 1) Topic introduction/abstract
 - 2) Orientation
 - 3) Complication
 - 4) Evaluation
 - 5) Coda

Introduction



Biber's (1988) multivariate approach

"linguistic features that co-occur in texts because they work together to mark some common underlying function within the text" (p. 55)

7 factors with functional dimensions:

- 1) Information vs. Involved
- 2) Narrative vs. Non-narrative concerns
- 3) Explicit vs. Situational-dependent reference
- 4) Overt expression or persuasion
- 5) Abstract vs. Non-abstract information
- 6) Online information elaboration
- 7) Academic hedging or qualifications

Aim of this study and method



- **Assessing the latent linguistic structure using multivariate approaches**

"language is encoded and decoded as a combination of interrelated language features" (Mulac & Lundell, 1994)

- 100 American-English & 100 German dream diary entries with an equal gender distribution) (German student dreams & American-English Hall/VdC norms dreams)
- Domhoff's dream bank
- Linguistic Word Count Inquiry (LIWC) (Pennebaker, Francis & Booth, 2001)
- English and German version

Results



Linguistic variables greater in American-English than German dreams

- Prepositions, numbers, tentative words, sensory-perceptual processes, past tense, exclusion words, and motion words

Linguistic variables greater in German than American-English dreams

- Group-references, articles, positive affect, negative affect, causation words, insight words, certainty words, present tense, spatial and time references, and current concerns

Factor structure



- Exploratory principal component analysis with an oblimin factor rotation
- 3 linguistic factor dimensions
- Linguistic variables > 1%

American-English dreams

	Component		
	1	2	3
1 st person singular	.721		
Senses	.641		
Past	.574		
Inclusion	-.467		
1 st person plural	-.412		
Other-references	.313		
Space		-.630	
Motion		-.516	
Insight		.480	
Present		.418	
Tentativeness		.397	
Certainty		.315	
Negative emotions		.211	
Exclusion			.782
Discrepancy			.553
Positive emotions			-.493
% of variance	14.47	10.32	9.53
Cumulative %	14.47	24.78	34.30

German dreams

	Component		
	1	2	3
Present	.917		
Past	-.788		
Insight	.484		
1 st person singular	.387		
1 st person plural	-.322		
Exclusion		.670	
Discrepancy		.655	
Inclusion		-.597	
Causation		.413	
Certainty		.294	
Space			.651
Other-references			-.502
Positive emotions			-.470
Negative emotions			-.441
Motion			.386
Tentativeness			.235
% of variance	14.65	11.43	10.65
Cumulative %	14.65	26.08	36.73

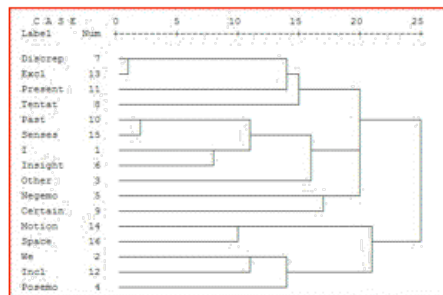
Cluster structure



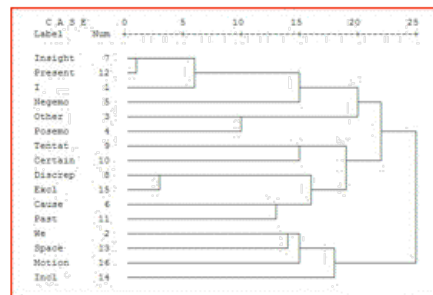
- Hierarchical cluster follow-up analysis proposed three homogeneous linguistic dimensions*
 - 1) self- and other-references
 - 2) level of description
 - 3) space and motion

*Cluster analysis has been firstly employed in the assessment of the latent linguistic structures in truthful and deceptive autobiographical memories (Cariola, O'Connor, & Conway, 2009)

American-English dreams



German dreams



Point of view

(Scheibman, 2002)



American-English dreams

Self- and other-references & past tense processes

- Task orientated recall of dream memory
- Self is located in the past and seeing the dream as it was back then

Level of description & present tense processes

- Expression of tentativeness
- Awareness of fuzzy vagueness and inaccuracy
- Auxiliary words, however, modify the tempus - very weak positive association with present tense ($r = .14$, $p < .05$)

German dreams

Self- and other-references & present tense processes

- Immediacy of recall "I remember now"
- Information is mediated by subjective and evaluative perspective about the recalled dream event (emotion words and insight words)
- Retellability and significance of dream event

Level of description & past tense processes

- Personal distance to dream event ("its in the past")
- Causal inferences of real-life in relation to dream experience

Conclusion



Discursive presentation of dream memories may be socioculturally moderated (Connor, 1996)

- Frequency of linguistic variables varied
- Latent linguistic structure is similar
- But, the temporal construction of subjectivity and recalled dream detail differed cross-culturally in American-English and German dreams

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Dank u wel!
Many thanks!

